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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/151,764 09/11/98 DOWLING

J A-6388

MM91/0718

DOUGLAS W ROBINSON
HOFFMAN WASSON & GITLER
2361 JEFFERSON DAVIS HIGHWAY STE 522
ARLINGTON VA 22202

EXAMINER

FUREMAN, J

ART UNIT

PAPER NUMBER

2876

DATE MAILED:

07/18/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/151,764

Applicant(s)

Dowling et al.

Examiner

Jared Fureman

Art Unit

2876



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on May 8, 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above, claim(s) 1-24, 28-35, and 37-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-27, 36, and 40-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other: _____

DETAILED ACTION

1. Receipt is acknowledged of the amendment filed on 5/8/2001, which has been entered in the file, claims 1-54 are pending, with claims 1-24, 28-35, and 37-39 being drawn to a non-elected invention.

Claim Objections

2. Claims 25, 41, 44, 45, 46, 49, 51, 52, and 54 are objected to because of the following informalities:

Claims 25, 45, and 46, line 4: "said multiple focusing zones" lacks proper antecedent basis.

Claim 41, line 2: "said second set of multiple lines" lacks proper antecedent basis.

Claim 44, line 8: "said CCD" lacks proper antecedent basis, "CCD" should be replaced with --charge coupled device (CCD)--, in order to clarify the claim.

Claims 49, 51, 52, and 54, line 2: "position" should be replaced with --positions--.

Appropriate correction is required.

3. Applicant is advised that should claim 45 be found allowable, claim 46 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP §

706.03(k).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 25, 42, 49, 50, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peng (US 5,365,049, previously cited).

Re claims 25, 42, 49, and 50: Peng teaches an optical symbology imager, comprising: a multiple line charge coupled device (CCD) (18) having an active area, a focusing apparatus comprising a focusing disk (wheel 4) with multiple optical positions (reflective surfaces 7) to provide different focal lengths, the disk being rotatable so that each of the multiple optical positions can move into an optical path of the imager, a microprocessor (not shown) for controlling the focusing apparatus and operation of the CCD, so that the CCD performs image capture producing image data for each of the multiple optical positions, the microprocessor controlling the CCD to shift out the image data, the microprocessor evaluating transitions between light and dark data in a central set of multiple scan lines (Peng evaluates all of the scan lines of the CCD, thereby including the central set of scan lines) to produce a

representative value for each of the multiple optical positions, the multiple optical positions being at least two, and the multiple optical positions being eight (surfaces 7a-7h) (see figure 6, column 1 lines 6-46, column 2 lines 3-26, column 2 line 61 - column 3 line 12, column 4 lines 4-16, and column 7 line 47 - column 8 line 13).

Peng fails to specifically teach shifting out the image data substantially serially, the largest representative value corresponding to one of the optical positions producing optimum focus, and the CCD having a resolution of 659 by 494.

However, it was well known to those of ordinary skill in the art at the time of the invention to shift out image data from a CCD substantially serially, that when an image is in a focused position it will provide the highest contrast between different portions of the image, furthermore, CCD's having a resolution of 659 by 494 were well known to those of ordinary skill in the art at the time of the invention (as applicant's acknowledge on page 3, lines 1-11, and page 11, lines 28-32 of the specification).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate, with the system as taught by Peng, shifting out the image data substantially serially, the CCD having a resolution of 659 by 494, in order to provide a CCD suitable for reading the intended images that has an output that is widely accepted, and the largest representative value corresponding to one of the optical positions producing optimum focus, in order to accurately determine the best focus position.

Re claim 51: Peng fails to specifically teach the multiple optical positions being twelve.

However, Peng teaches that the number of multiple optical positions is variable (see column 6 lines 1-4) and that the number of focusing lengths depends on the number of multiple optical positions (reflective surfaces, see column 3 lines 9-12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate, with the system as taught by Peng, the multiple optical positions being twelve, in order to increase the number of focusing lengths, thereby increasing the range of distances over which proper focus may be achieved. Furthermore, it is an obvious variation, well within the ordinary skill in the art at the time of the invention, that fails to provide any unexpected results.

6. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Peng as applied to claim 25 above, and further in view of the admitted prior art.

Peng is silent as to whether the optical symbology imager is stationary or hand-held, and thus, fails to specifically teach that the optical symbology imager is hand-held.

The admitted prior art teaches that scanners may be either installed in a fixed location or portable hand-held units (see page 2, lines 10-30).

In view of the admitted prior art, it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate, with the system as taught by Peng, the optical symbology imager being hand-held, in order to provide a more convenient and versatile optical symbology imager (for example: a hand-held optical symbology imager would be more

convenient when it is necessary to scan large or heavy items which would be difficult to move past a fixed scanner at a point of sale terminal).

7. Claims 26, 40, 41, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peng as applied to claim 25 above, and further in view of Parulski et al (US 5,563,658).

Re claims 26, 41, and 43: Peng fails to teach the CCD disposing of a first set of multiple scan lines and then sampling a second set of scan lines from the central set of scan lines, the second set of multiple lines being substantially ten lines, the microprocessor only utilizing the central set of multiple lines to produce the optimum focus.

Parulski et al teaches disposing of a first set (68) of multiple scan lines of a CCD (20) and then sampling a second set (center region 66) of scan lines from the central set (the center section of the imager) of scan lines, the second set of multiple lines being substantially ten lines (for example 4, 8, or 16 lines), the microprocessor (processor section 35) only utilizing the central set of multiple lines to produce the optimum focus, in order to reduce the amount of time needed for focusing (see column figures 1, 3, column 2 line 60 - column 3 line 3, column 4 line 29 - column 5 line 14, and column 6 lines 60-64).

In view of Parulski et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate, with the system as taught by Peng, the CCD disposing of a first set of multiple scan lines and then sampling a second set of scan lines from the central set of scan lines, the second set of multiple lines being substantially ten lines, the microprocessor only utilizing the central set of multiple lines to produce the optimum

focus, in order to reduce the amount of time needed for focusing, thereby providing a faster system.

Re claim 40: Peng as modified by Parulski et al fails to specifically teach that the first set of multiple lines is 246 lines.

However, Parulski et al does teach that the number of lines in the first set of multiple lines is variable and depends upon the conditions under which the system is intended to be used (see column 6 lines 60-64), thus, the number of lines in the second set of multiple lines is also variable (this is true since if the number of lines disposed of must be decreased).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate, with the system as taught by Peng as modified by Parulski et al, the first set of multiple lines being 246 lines, in order to adapt the system to the conditions under which the system is intended to be used. Furthermore, it is an obvious variation, well within the ordinary skill in the art at the time of the invention, that fails to provide any unexpected results.

8. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Peng as applied to claim 25 above, and further in view of England (US 5,510,604, previously cited).

Peng fails to teach the representative value being produced by totaling a first seven to ten values from multiple values produced for each of the multiple focusing zones.

England teaches producing a representative value (of a bar code) by totaling (each scan may be averaged from several sub-scans, producing an average includes totaling the values) a

plurality (thus, suggesting at least 7-10) of values from multiple values produced by an imager, in order to ensure valid results (see the abstract, and column 5 line 35 - column 6 line 3).

In view of England's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate, with the system as taught by Peng, the representative value being produced by totaling a first seven to ten values from multiple values produced for each of the multiple focusing zones, in order to ensure valid results.

9. Claims 44, 47, and 52-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Broockman et al (US 4,800,256) in view of the admitted prior art.

Broockman et al teaches an optical symbology reader comprising: a light transmissive focusing apparatus comprising a focusing disk (holographic disk 10) with multiple optical positions (facets 16A, 16B, etc.) to provide different focal lengths, the disk being rotatable so that each of the multiple optical positions can move into an optical path (30) of the reader, a microprocessor (processor 40) for controlling the focusing apparatus, a photodetector (34) producing data for each of the multiple optical positions, the microprocessor evaluating transitions between light and dark data to produce a representative value for each of the multiple optical positions, the multiple optical positions being at least two, the multiple optical positions being thirteen (thus including eight and twelve), (see figure 1 and column 3 line 50 - column 4 line 33).

Broockman et al fails to teach an optical symbology imager, the microprocessor controlling operation of a charge coupled device (CCD) so that the CCD performs image

capture producing image data for each of the multiple optical positions, the microprocessor evaluating transitions between light and dark data in a central set of multiple scan lines to produce a representative value for each of the multiple optical positions, the multiple line CCD having a resolution of 659 by 494.

The admitted prior art teaches that two-dimensional arrays such as CCD arrays have may be used instead of the traditional laser and single photodiode, a CCD having dimensions of 640 by 480 pixels provides sufficient resolution for use with VGA monitors and is widely accepted, that the use of a two dimensional sensor allows use with spatially oriented two dimensional codes, and that CCD's having a resolution of 659 by 494 (which provide the common 640 by 480 resolution) were commercially available at the time of the invention (see the description of the prior art, page 3, lines 1-11, page 11 line 28 - column 12 line 2). The CCD is necessarily controlled by processor hardware which evaluates transitions between light and dark data in a central set of multiple scan lines (the processor hardware typically evaluates light and dark data in every scan line of the CCD, thereby including a central set of multiple scan lines) to produce a representative value.

In view of the admitted prior art, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system, as taught by Broockman et al, to include: an optical symbology imager, the microprocessor controlling operation of a charge coupled device (CCD) so that the CCD performs image capture producing image data for each of the multiple optical positions, the microprocessor evaluating transitions between light and

dark data in a central set of multiple scan lines to produce a representative value for each of the multiple optical positions, the multiple line CCD having a resolution of 659 by 494, rather than the conventional laser and single photodetector, in order to allow use of the system with two dimensional spatially oriented codes, which contain greater information density than a linear bar code (see the description of the prior art, page 2, lines 1-6).

Broockman et al as modified by the admitted prior art fails to specifically teach shifting out the image data substantially serially, and the largest representative value corresponding to one of the optical positions producing optimum focus.

However, it was well known to those of ordinary skill in the art at the time of the invention to shift out image data from a CCD substantially serially, and that when an image is in a focused position it will provide the highest contrast between different portions of the image.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate, with the system as taught by Peng, shifting out the image data substantially serially, and the largest representative value corresponding to one of the optical positions producing optimum focus, in order to accurately determine the best focus position.

10. Claims 45 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Broockman as modified by the admitted prior art as applied to claim 44 above, and further in view of England.

Broockman as modified by the admitted prior art fails to teach the representative value being produced by totaling a first seven to ten values from multiple values produced for each of the multiple focusing zones.

The teachings of England have been discussed above.

In view of England's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate, with the system as taught by Broockman as modified by the admitted prior art, the representative value being produced by totaling a first seven to ten values from multiple values produced for each of the multiple focusing zones, in order to ensure valid results.

11. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Broockman as modified by the admitted prior art as applied to claim 44 above, and further in view of Parulski et al.

Broockman as modified by the admitted prior art fails to teach the microprocessor only utilizing the central set of multiple lines to produce the optimum focus.

The teachings of Parulski et al have been discussed above.

In view of Parulski et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to integrate, with the system as taught by Broockman as modified by the admitted prior art, the microprocessor only utilizing the central set of multiple lines to produce the optimum focus, in order to reduce the amount of time needed for focusing, thereby providing a faster system.

Remarks

12. It is noted that applicant's have now stated that claims 36, 40, and 41 are included in elected group III (see page 2 of the amendment filed on 5/8/2001), but failed to do so at the time of the election of group III (see the interview summary, paper number 9). Thus, claims 36, 40, and 41 have now been addressed.

Response to Arguments

13. Applicant's arguments filed 5/8/2001 have been fully considered but they are not persuasive.

In response to applicant's argument that the present invention utilizes a CCD having multiple lines, this is in contradistinction to Peng which includes a CCD having a single scan (see page 3 of the amendment filed on 5/8/2001), Peng states that the image sensing means preferably comprises a CCD array (see page 4, lines 10-11) and does not specifically state whether the CCD array is a one or a two dimensional array. However, Peng clearly shows a two dimensional array in figure 6 (see reference numeral 18, pointing to the CCD array, which clearly shows an array which has multiple rows and columns). It is noted that applicant's have not pointed to any teaching that Peng is using a single scan CCD array, but have merely made an assertion that Peng is using a single scan CCD array.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on

combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

It is noted that applicant's have not seasonably traversed the well known statement (see page 4 of paper number 11), thus in accordance with MPEP 2144.03, the object of the well known statement is taken to be admitted prior art.

Applicant's other arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Parulski et al (US 5,668,597) and Suga et al (US 5,363,137) both teach utilizing a central set of multiple scan lines in order to determine the best focus position. He et al (US 6,250,551) teaches sampling a CCD array.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jared Fureman** whose telephone number is (703) 305-0424. The examiner can normally be reached between the hours of 7:00AM to 4:30PM Monday thru Thursday and every other Friday (second Friday of the bi-week).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael G. Lee, can be reached on (703) 305-3503. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722, (703) 308-7724, or (703) 308-7382.

Serial Number: 09/151,764

Applicant(s): Dowling et al. (235/462.45)

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Art Unit: 2876

Representative: Mr. Mitchell B. Wasson (27,408)

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [jared.fureman@uspto.gov].


All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

jjf

jjf

July 14, 2001


MICHAEL G. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800